# *Updates to Proposal to Sample Buildings for the Presence of World Trade Center Dust*

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World Trade Center Expert Technical Review Panel

# Background

- This presentation will review the latest proposal for sampling to determine the extent of WTC impacts.
- This is a revision of the proposal presented first to the panel on July 26, 2004, with edits from the September 13 meeting.
- Changes are based on discussions and efforts to address issues raised.

# Objectives

(1) To estimate the geographic extent of WTC contaminants of potential concern (COPCs) resulting from the building collapse and fire plume by surveying residential and non-residential buildings in lower Manhattan that volunteer to participate.

Sub-objectives will be to relate results of the survey to building cleaning history and to the role of central heating, ventilation and air conditioning (HVAC) if the information collected will support such an analysis;

(2) To provide the data necessary to determine if a Phase II sampling should proceed, which will test for the presence of collapse and fire plume residues in areas beyond the boundaries of the areas currently tested, and to provide the data necessary to determine whether and what further actions are warranted; and

(3) To validate a method to identify a signature for WTC dust and/or combustion products.

# Components of the Study

- Spatially balanced strategy to select sampling locations from a list of volunteer buildings, including stratification.
- Unit, building and HVAC sampling approach laid out.
- WTC Signature Study to determine building collapse and fire signatures ongoing.
- Procedures for dust sampling for COPCs and signatures being evaluated.

# Changes to Current Sampling Plan

- No air sampling.
- Strategy for development of COPC cleanup benchmarks.
- Development of criteria for cleanup decisions.

# Benchmark Assignment

- Options for setting cleanup benchmarks include:
  - Health-based; Region 2 developed health-based benchmarks for PAHs and lead in dust for the 2002 Indoor Air Cleanup Program.
  - Three times background; which has precedence in Superfund National Priority Listing.
  - Occupational benchmarks could be available for sampling which occurs in workplace settings.

# Background Data Sources

- 2002 WTC Background Study by EPA Region 2.
- Current WTC Signature Study includes sampling of 10 impacted and 10 background buildings.
- Other studies in NYC and literature.

# Contaminants

| COPC | Health-based benchmark | | Background |
|---|---|---|---|
| Asbestos | N/A | microvac | 2,783 f/cm$^2$ |
| | | wipe | 37,174 f/cm$^2$ |
| MMVF | N/A | | 38 f/cm$^2$ |
| PAH | 150 µg/m$^2$ | | N/A |
| Silica | N/A | | N/A |
| Lead | 25 ug/ft$^2$ | | 4 ug/ft$^2$ |

Notes:

- N/A is not available
- Benchmarks and background need to be keyed to sampling method (microvac or wipe).
- Asbestos and MMVF background from 2002 EPA Region 2 Study.
- PAH and lead benchmarks were developed for 2002 EPA Indoor Air Cleanup Program and were peer-reviewed.

# Contaminants

- Dioxin and mercury not included as COPCs based on very low occurrence in the 2002 EPA Indoor Air Cleanup program.
  - There were only 6 exceedances of the mercury benchmark in dust out of 1517 wipe samples from 263 apartments.
  - There were only 8 exceedances of the dioxin benchmark in dust out of 1538 samples from 263 apartments.

# Decision Criteria

- For Unit Cleanup Offer:
  - Presence of signature and exceedance of at least one benchmark required.
  - If signature present but no COPC exceedance or if COPC exceedance but no signature, then a cleanup will not be offered.
- For Building Cleanup Offer:
  - 95% Upper Confidence Limit (UCL) on mean of all measurements in the building associated with WTC dust for at least one COPC exceeds benchmark, then cleanup is offered.

# *Discussion Points – Decision Criteria*

- If signature study proves unsuccessful, then attribution of COPC findings to WTC dust is not possible. How does this affect sampling and cleanup decisions?

- What are possible broad study criteria to be used to determine what further activities are to occur after this sampling program is complete?

# Discussion Points - Sampling

- HEPA Vacuum as a means for dust sample collection:
  - Larger sample volume, which may be necessary for organic COPCs.
  - May obviate the need for surface wipe samples.
  - Unnecessary complexity when determining background and benchmark for different sample collection methods.

- Reconsider passive air sampling:
  - As per NYSDOH letter to NYCDEP, dust sample testing for asbestos cannot be used in New York State because there are no public health asbestos standards relating to dust.
  - Portable samplers (which could rest on shelves or could be worn by individuals in the house over a period of a month or more) could determine time integrated exposure concentrations of COPCs.